

Hazardous Materials Bulletin

HM LOAD SECUREMENT

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Load securement is a major concern with hazardous materials transported in van trailers, stake trucks, and other similar equipment. The Federal Hazardous Materials Regulations (FHMR) has additional securement requirements beyond what is found in the Federal Motor Carrier Safety Regulations (FMCSR) and other state law.

General

Section 177.834(a) (Title 49, CFR, Parts 100-180) requires that any packages containing any hazardous material, that are not permanently attached to the vehicle, be secured from shifting in all directions. This securement must protect the package from movement "under conditions normally incident to transportation." **Gravity, a common excuse for unsecured loads, is not an acceptable means of securing cargo.**

The phrase "under conditions normally incident to transportation" includes vehicle movements such as starting, stopping, cornering, accident avoidance, and varied road conditions. The requirements can be met by blocking the packages with other freight, the use of tie-downs, toe-boards, load-bars, or other similar securement methods or devices. Drums banded together or packages shrink-wrapped on a pallet do **not** meet the load securement requirements unless the entire unit is secured to the vehicle. Packages placed at the nose of the vehicle must also have rearward securement protection.

Michigan experienced an incident in 1998 where an IBC was improperly fitted with a valve that extended past the surface of the IBC, and was transported unsecured in a van truck. The valve sheared off while in transportation, and the resulting spill closed I-75 between Saginaw and Detroit for several hours. While no one was injured, the incident demonstrates the necessity of load securement.

Section 177.834 (j) requires that all manholes and valves on a cargo tank motor vehicle are securely closed and free of leaks.

Specific Classes

Similar securement requirements for Class 1 materials are found in Section 177.835 (b)(1), (h), and (i), and include the use of tarpaulins.

There are specific provisions in Section 177.840 for cylinders (a) and portable tanks (b) containing gases (Class 2). In addition to securement, cylinders must have some form of valve protection (173.301 (h)). A pressure relief device must be in communication with a cylinder containing a Division 2.1 (flammable gas) material. Manifolding of cylinders is addressed in Section 173.301(g).

Classes 4 and 5 materials must be kept dry while in transit, kept within the vehicle, and secured against movement (§177.838(a), (b) and (f)). There is an exception in paragraph (a), however, that the provisions of this paragraph do not apply to local "pick up and delivery" vehicles.

Section 177.842(d) states that packages of Class 7 materials must be secured so that they cannot "change position during conditions normally incident to transportation."

The Federal Motor Carrier Safety Regulations (FMCSR) requires that all freight be "contained, immobilized or secured to prevent shifting upon a vehicle".

Section 177.848 addresses segregation and separation of hazardous materials, and includes the Segregation and Separation Chart.

Note: This bulletin only addresses sections and paragraphs related to **securement**. There are a number of generic, class-specific and even material-specific regulations covering loading and unloading, care and handling, compatibility, segregation, etc. Review Part 177 for details.

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Michigan State Police Motor Carrier Division www.michigan.gov/motorcarrier

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